

** LOAN PLANNER **

Professional
Loan Amortization
Program

by

DATAPLAN

Donald W. Watson

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by

Donald W. Watson

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Version AD/1.0

for

Apple II and Apple II Plus Computers
with at least 40K Ram installed

and for

Apple IIc Computers

OS 3.3 is required

(and disk drive is recommended)

- Published By -

DATAPLAN

2450-L Foothill Boulevard
Catalago CA 94515

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Version AD/1.0

for

Apple II and Apple II Plus Computers
with at least 48K Ram installed

and for

Apple IIe Computers

DOS 3.3 is required

(One disk drive is adequate)

- Published By -

DATAPLAN

2450-L Foothill Boulevard
Calistoga CA 94515

**** WARRANTY ****

LOAN PLANNER was developed and tested with standard (unmodified) equipment including Apple II computers, disk drives and control cards, and with selected printers. DATAPLAN warrants that LOAN PLANNER has been proven to calculate, display, and print a wide range of loan data as exemplified by the loan planning exercise used in this manual; and that the diskette supplied with this manual was tested and found to perform correctly prior to shipment.

**** DISCLAIMER ****

DATAPLAN assumes no liability for failure of the product to perform on the buyer's equipment, nor for direct or consequential damages resulting from any use of the product.

**** REPLACEMENT POLICY ****

DATAPLAN customers of record can obtain a replacement LOAN PLANNER diskette, by returning the originally purchased diskette with a check or money order (U.S. currency) for \$10.00 to:

DATAPLAN
2450-L Foothill Boulevard
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INTRODUCTION

The Monthly Payment for a loan can be determined easily with a calculator or with a book of loan data tables. The Loan Principal, Interest Rate (Annual Percentage Rate), and Loan Term must be known.

When there is a need for detailed loan data, the calculator leads to drudgery, and the data tables fail completely. LOAN PLANNER, in just a few minutes, provides:

- rapid, accurate calculation and recalculation of detailed loan data for common loan situations
- printed summary sheet and repayment schedules (yearly and monthly), in professional 8 1/2 x 11-inch format.

The following brief instructions will show you how to plan monthly repayment fixed interest rate loans and print needed reports.

** IMPORTANT **

The LOAN PLANNER program is written for Apple II computers equipped with at least 48K internal memory (RAM) and at least one disk drive (DOS 3.3). If your computer is an Apple II an Autostart ROM is helpful, but you must have a 16K RAM extension card in slot 0 or an Applesoft II ROM card installed. With an Apple II Plus or Apple IIe, you're ready to go.

LOAN PLANNER has been tested and successfully operated with the Apple Parallel Printer Interface Card using an Okidata Microline 80 dot matrix printer, and with an Apple Serial Interface Card using a Qume Sprint 5/55 daisy wheel printer. The program has also been used successfully with the Epson MX-80, MX-100, and FX-100 (parallel) dot matrix printers. If your printer does not respond correctly with LOAN PLANNER, see the printer and interface card manuals for printer control instructions; the printer may require special preparation or control codes before it can be used with LOAN PLANNER.

In this manual, <RET> is an instruction to you to press and release the RETURN key. <CTRL>C is an instruction to hold the CONTROL key down, press and release the C key, then release the CONTROL key.

USING LOAN PLANNER

The DATAPLAN LOAN PLANNER diskette shipped to you is formatted for DOS 3.3 operation. With the DOS 3.3 COPY program, you can make as many working copies as you need. Each copy provides you with a "turnkey" program if you have an Autostart ROM.

If you're an old hand with your Apple II and know how to boot DOS 3.3 diskettes with your computer, then:

Make a working copy of the DATAPLAN LOAN PLANNER diskette and boot the working copy. When the custom data screens show up, respond to the queries. When you have the Loan Data Entry Screen in view, turn the computer OFF and go directly to the instructions beginning with ENTER LOAN DATA below.

If you are a relatively new Apple II user and unsure of yourself with new programs, then:

See Appendix A: GETTING STARTED for preparation before you proceed with the following loan planning instructions.

ENTER LOAN DATA. Assume you want to buy an automobile, you need \$5000 to add to your down payment, and you can get the money at 12 per cent (Annual Percentage Rate) for 48 months. Execute the following steps:

1. If you are using an Apple II Plus or an Apple II with an Autostart ROM (or an Apple IIe), place the working LOAN PLANNER diskette in Drive 1 and turn the computer ON.

If you are using an Apple II without an Autostart ROM, place your working DOS 3.3 Master Diskette in Drive 1 and turn the computer ON. From Applesoft, type PR#6<RET>. When DOS 3.3 has booted, place the LOAN PLANNER working diskette in Drive 1 and type PR#6<RET> or type RUN HELLO<RET> to start the program.

2. Since the diskette has a custom data file (LP/CD), the sign-on is displayed briefly, then the Loan Data Entry Screen appears.

3. Type E (for Entry). The loan summary data section of the screen is automatically erased.

4. Type 5000<RET> to enter the Loan Principal.
5. Type 12<RET> to enter the Interest Rate.
6. Type 48<RET> to enter the Loan Term.
7. Type <RET>; the Monthly Payment calculation is made quickly and the exact required Monthly Payment of \$131.67 is displayed.
8. Type P (to Proceed).
9. Any date will do, but enter a first monthly payment due date of July 5, 1984 by typing N (for NO), then type 7/5/84<RET>. Don't try to use beginning zeroes for month or day entries.

A due date later than the 27th day of any month is displayed on the screen in the form MM/**/YY, and printed in that form on the Monthly Report with the message "*** PYMTS DUE ON LAST DAY OF EACH CALENDAR MONTH." This is a convenient method for standardizing month-end due dates for 28, 29, 30, and 31-day months.

10. Type Y (for YES) to accept the due date and watch the display as the loan repayment information is calculated and displayed a year at a time. Now that was fast, wasn't it?

11. If the Loan Term is 15 years or more, the program execution will stop at the fifteenth year, with a Proceed prompt displayed.

12. When the calculations are complete, the loan summary data will be displayed at the base of the screen with a prompt. \$1320.10 is shown for Total Interest Paid, \$5000.00 for Total Principal Paid (better be!), and \$0.00 for the Loan Balance. \$131.61 is shown for the Final Payment, and \$6320.10 for the Total Amount Paid. Type P, and the completed Loan Data Entry Screen is immediately displayed.

You can proceed at Step 13 to print reports. If you'd rather, skip to Step 18 to PLAN THE LOAN. Any time adequate loan data are available you can elect to print reports with the T, Y, and M prompts at the lower left corner of the Loan Data Entry Screen.

PRINT REPORTS. Be sure your printer is properly cabled to the computer, and that you have properly responded to the custom data queries in Appendix A (steps 2 and 3).

13. Turn the printer power ON and place the printer in "On Line" mode. Adjust the paper to begin printing at the top line of a fan-fold sheet. Be sure your printer is set for 0 (zero) characters left margin and 10 characters per inch horizontal pitch. If the printer has the ability to avoid printing at the fan-fold, defeat that function; LOAN PLANNER will skip the fan-fold automatically.

14. Type T to print a Summary Report. The printer will start immediately. The Summary Sheet is a copy of the Loan Data Entry Screen, excluding the command prompts.

If you were to try to print a Summary Report after entering the loan entry data but before the loan summary data are calculated and displayed, a "CALCULATE SUMMARY DATA" message will appear. The message is a reminder; you can type P (to Proceed) to perform the calculations (and watch the display of results), or print either of the other two reports. Execution of any one of these three options will terminate with a complete Loan Entry Data Screen and you'll be ready to print a Summary Report.

15. Type Y to print a Yearly Report. Type Y again to accept the 7/5/84 due date entry. The "PRINTING SCHEDULE" message will appear again, and the Yearly Report will be printed.

16. Type M to print a Monthly Report. Type Y to accept the 7/5/84 due date, and Y again to "Print Due Dates" on the report. The "PRINTING SCHEDULE" message will appear, and the Monthly Report will be printed on two consecutive fan-fold sheets.

17. Remove the reports from the printer and turn the printer power OFF. The program leaves the Loan Data Entry Screen displayed, with the loan entry data and the calculated loan summary data in view.

You have successfully performed all the functions of entering, calculating, and printing complete data for a typical monthly repayment, fixed interest rate loan.

The Monthly Report shows only six payments to be made in 1984 (first payment due 7/5/84 remember?) and the correct number of payments due in each year thereafter. The reported Interest Paid at the end of each year is handy information for your list of tax-deductibles.

In the next short exercises, you will teach yourself how to plan the loan to gain the benefits of convenience and economy in repayment.

PLAN THE LOAN. Writing a check for \$131.67 is tedious, but avoidable. The checks would be easier to write if the Monthly Payment were an even amount like \$140.00 - and the loan would be paid off earlier with a significant saving in Total Interest Paid.

18. Type E (for Entry). A "CLEARING LOAN DATA" message appears briefly. The Loan Term is set to 0 months, the Monthly Payment is set to 0.00 dollars, and the cursor moves to the Loan Principal entry position.

19. Type <RET> to leave the Loan Principal at \$5000.00, and type <RET> again to leave the Interest Rate unchanged at 12.00 per cent.

20. Type <RET> once more to leave the Loan Term at 0 (zero) months. You could restore the original Loan Term by typing 48<RET>, but you will see that it is not necessary.

21. Now type 140<RET> to set the Monthly Payment at \$140.00.

22. Type P (to Proceed), and Y (to accept the due date). When the loan data have been recalculated, you'll see that the Final Payment is \$56.69 and the Total Amount Paid is reduced to \$6216.69.

23. Remember that the calculation will stop at the fifteenth year on long term loans, with a Proceed prompt displayed.

24. When the calculations are complete, Type P. The Loan Data Entry Screen quickly reappears, and shows the Loan Term to be only 45 months. Using \$140.00 for a convenient Monthly Payment pays off the loan three months earlier - and you save a little interest money to (stash in your) boot.

Now you have the loan planned to suit your convenience and economy; it is no longer a loan based on an odd number of dollars and cents for the Monthly Payment (from a calculator or loan table).

You can print any one or all of the reports here if you like (refer to Step 13), or plan the loan further and print reports later.

EARLY TERMINATION. Assume now that the money is borrowed for repayment in 45 months at \$140.00 per month as planned so far. But assume further that the months go by and early in 1986 you realize you will

have a substantial refund coming from the IRS in April of that year - enough cash to pay off the automobile loan in full. Inspection of the Monthly Report (if you have printed one) shows that the 22nd payment is due in April 1986. If you haven't printed a monthly report yet, it takes just a few seconds to count the months off.

25. Type E (for Entry), and type <RET> twice to leave the Loan Principal and Interest Rate unchanged.

26. Type 22<RET> to set the Loan Term to a planned 22 months.

27. Type 140<RET> to restore the planned \$140.00 Monthly Payment.

28. Type P (to proceed) and Y to retain the 7/5/84 first payment due date. The loan data will be recalculated quickly - the Final Payment (known in the trade as a "balloon payment") is \$2937.55 and the Total Amount Paid is only \$5877.55.

29. When the calculations are complete, type P to return to the Loan Data Entry Screen.

Here again, you have the option to print any or all reports for the fully planned loan - back to Step 13 for that.

HOW MUCH TO BORROW?. There's at least one more practical way to plan a loan. Suppose the Monthly Payment you can afford is \$140.00 (for example), the lender establishes the required Interest Rate (12 per cent) and the maximum Loan Term (48 months). How much could you borrow? The amount must be greater than \$5000 - you'll be paying \$140.00 each month instead of only \$131.67.

30. Type E (for Entry). The "Clearing Loan Data" message appears briefly, and the cursor returns to the Loan Principal entry position.

31. Type 0<RET> to set the Loan Principal at \$0.00.

32. Type <RET> to leave the Interest Rate at 12.00 per cent.

33. Type 48<RET> to restore the Loan Term to 48 months.

34. Type 140<RET> for the planned \$140.00 Monthly Payment. The program will immediately calculate and display \$5316.35 as the Loan Principal that can be repaid under the given terms.

But \$5316.35 is an odd value for a Loan Principal. Suppose that you have your eye on a neat accessory that would add about \$300 to the price of the automobile, and that you decide to borrow \$5300 even.

35. Type E (for Entry). The cursor will return to the Loan Principal entry position.

36. Type 5300<RET> to set the Loan Principal at \$5300.00

37. Type <RET> twice to retain the 12.00 per cent Interest Rate and the 48-month Loan Term.

38. Type 140<RET> to restore the Monthly Payment to \$140.00.

39. Type P (to Proceed) and Y to accept the due date entry.

40. When the loan data have been calculated, type P to return to the Loan Data Entry Screen, where the Final Payment is \$113.66, the Total Interest Paid is \$1393.66, the Total Principal Paid is \$5300.00, and the Total Amount Paid is \$6693.66.

If you have not printed any reports yet, now is the time. Go to Step 13 and print any or all of the three reports. If you print a Monthly Report and immediately try to print another, you may get an "OUT OF MEMORY" message and be bumped back to Applesoft. Never fear; just type PR#6<RET> (or type RUN HELLO<RET>) to restart the program, restore the loan entry data, and print the second Monthly Report.

Whenever the Loan Data Entry Screen is on the display, you have the option to type C to clear all loan data from the computer memory. A "Clearing Memory" message will appear briefly and the Loan Data Entry fields will be zeroed for you. With that accomplished you know you can start a new loan planning exercise from scratch. Type E to begin entries for the new exercise.

APPLICATIONS. The automobile loan exercise was chosen as an example of a common typical application for LOAN PLANNER; in that exercise, the dollar values are relatively small and don't interfere with the instructions. It should be obvious that LOAN PLANNER is an extremely useful and valuable tool for mortgage brokers, real estate brokers, loan officers, financial planners, business consultants, and (especially) borrowers.

MAXIMUM VALUES. The maximum values you can enter at the Loan Data Entry Screen are:

LOAN PRINCIPAL : 10000000 DOLLARS

INTEREST RATE : 50.00 PER CENT

LOAN TERM : 360 MONTHS

MONTHLY PAYMENT: 1000000 DOLLARS

Large loans at high interest rates for long terms (or combinations of some of those conditions) may cause minor display and printed format faults with calculated bottom line values, but all data reported will be complete and correct.

CHANGING CUSTOM DATA. The custom data file LP/CD on your LOAN PLANNER working diskette contains the identification of your printer type (parallel or serial), the printer control card slot number, and the default custom heading.

LOAN PLANNER is designed to react in one of two ways when you start the program:

- If the file LP/CD is present (and detected), the program will read the custom data from the file and proceed directly to the Loan Data Entry Screen.
- If the LP/CD file is not present (or is not detected) on the diskette, the program will proceed from the sign-on screen to the custom data entry screens. When you have responded to the queries, the program will create the LP/CD file to store the custom data you entered.

Any time you want to change the custom data in the LP/CD file, you must first delete that file from the working diskette and then restart the program.

From Applesoft with DOS 3.3 present, type the DOS 3.3 command DELETE LP/CD<RET>, wait for the disk drive to delete the file from your working LOAN PLANNER diskette, then type PR#6<RET> or RUN HELLO<RET> to restart the program. The custom data entry screens will appear so you can enter new data. See Appendix A, step 2 for the data entry procedure if you need the help in responding to the queries.

If you're working with the program, there is an easy way to get to Applesoft. First, work the program to get to the Loan Data Entry Screen (you're usually there anyway), type E to get the cursor to the Loan Principal entry position, and type <CTRL>C followed by <RET>. Type HOME<RET> to clear the screen, then delete the file LP/CD and restart the program as explained above.

See "The DOS Manual" for instructions on use of the DOS 3.3 DELETE command, and for booting DOS 3.3 diskettes with your system.

* * * *

Appendix A: GETTING STARTED

BACKUP COPY. The DATAPLAN LOAN PLANNER diskette is copyable with the DOS 3.3 System Master COPY program. The LOAN PLANNER program is copyrighted and it is unlawful to copy it in any form by any means for any purpose other than your personal and non-commercial use.

See "The DOS Manual" for instructions on disk copying, and make at least one working copy of the DATAPLAN LOAN PLANNER diskette. File the DATAPLAN diskette safely away; use it only to make working copies.

From Applesoft with DOS 3.3 present, and with the LOAN PLANNER working diskette in Drive 1, type CATALOG<RET>; you'll see that the diskette holds files titled HELLO, RUNTIME, and LNPLNR.OBJ. The original program (LNPLNR), written in Applesoft BASIC is impractically and agonizingly slow; it has been compiled into machine code using the Microsoft TASC compiler. The compiled program named LNPLNR.OBJ is provided for your use and runs about ten times faster than the original. You'll find the program will respond promptly to your commands, and that it will calculate and display results rapidly. If your printer does not slow it down, it will print reports rapidly also. RUNTIME must remain on your diskette to support LNPLNR.OBJ.

WORKING DISKETTE PREPARATION. The LOAN PLANNER program provides a convenient means to store the printer type (parallel or serial), the printer control card slot number (1, 2, 3, or 4), and a custom heading to appear on program screens and on printed reports. Execute the following brief instructions to prepare your LOAN PLANNER working diskette for use:

1. If your computer is an Apple II (with Autostart ROM), an Apple II Plus, or an Apple IIe, place the LOAN PLANNER working diskette in the disk drive (Drive 1 if you have two drives). If the computer is OFF, just turn it ON; if it is already ON, type PR#6<RET>.

If your computer is not an Apple II Plus or Apple IIe and you do not have an Autostart ROM, turn the computer ON, place your DOS 3.3 System Master diskette (working copy) in Drive 1, and from Applesoft type PR#6<RET>. When DOS 3.3 is booted, place the LOAN PLANNER working diskette in Drive 1 and type PR#6<RET> or type RUN HELLO<RET>.

2. The LOAN PLANNER sign-on (and Copyright notice) screen will be displayed for a few seconds; then a printer data entry screen is dis-

played. If you have a parallel printer, and the control card is in slot 1, just type Y (for YES). Otherwise, type N (for NO) and respond to the queries. Your printer control card can be in slot 1, 2, 3, or 4. When the entries are OK, type Y.

3. A custom heading entry screen will appear. If you just type <RET>, the heading will default to DATAPLAN. You can compose a heading of your own in a single line of up to thirty characters; start with an alphabetic character, and use neither commas nor colons anywhere. End the heading with <RET>. When the displayed heading is OK, type Y and that heading will immediately appear at the top center of the screen. It will also appear on the Loan Data Entry Screen and at the beginning of each printed report.

4. The "SAVING CUSTOM DATA" message will appear briefly while the system saves the custom data in a file named LP/CD on the diskette.

5. The Loan Data Entry Screen will appear, and you are ready for a loan planning exercise. Turn the computer OFF and return to the section titled "USING LOAN PLANNER."

Appendix B: SCREEN MESSAGES

SAVING CUSTOM DATA. Whenever you complete the custom data entries, identifying the printer type (parallel or serial), the printer control card slot, and the heading you require on LOAN PLANNER screens and reports, the "SAVING CUSTOM DATA" message will appear while the entries are saved in the LP/CD file on your working diskette.

ENTER LOAN DATA. Valid loan data entries must be made and displayed at the Loan Data Entry Screen before attempting to print a report (or to "Proceed"); otherwise, the "ENTER LOAN DATA" message will appear briefly as a reminder to make the entries. Required entries include Loan Principal, Interest Rate (Annual Percentage Rate), Loan Term, and Monthly Payment.

CALCULATE SUMMARY DATA. An attempt to print a Summary Report using the T command (for "This Screen") before the loan summary data have been calculated and displayed will cause the "CALCULATE SUMMARY DATA" message to appear briefly as a reminder to "Proceed" with the calculations before the report can be printed.

PRINTING SCHEDULE. When the command Y to print a Yearly Report or the command M to print a Monthly Report is entered at the Loan Data Entry Screen, the "PRINTING SCHEDULE" message will appear before the printer starts. The main body of each report is a schedule of loan amortization data. See "ENTER LOAN DATA" message above for further conditions.

CLEARING LOAN DATA. If the Loan Data Entry Screen displays valid loan data entries and calculated summary data, the E (for Entry) command will cause the "CLEARING LOAN DATA" message to appear. The Loan Term will be set to 0 (zero) months, the Monthly Payment will be set to 0.00 dollars, the loan summary data items will each be set to 0.00, and the cursor will be placed at the Loan Principal entry position. The Interest Rate will remain unchanged.

CLEARING MEMORY. The C (for Clear) command will set all loan entry data and summary data entries to zero.

Appendix C: COMMANDS

LOAN PLANNER uses six single keystroke commands. Any command can be entered when the flashing cursor is in the prompt position at the lower right corner of the Loan Data Entry Screen.

E (for Entry) is used to move the cursor to the Loan Principal data entry position.

P (for Proceed) is used at the Loan Data Entry Screen to begin the loan data amortization calculation and display routine. On long-term loans, the prompt will appear in its normal position when data for the fifteenth year are displayed; and when loan data calculations are complete.

C (for Clear) is used to set all loan entry data and loan summary data to zero.

T (for This Screen) is used to print a Summary Report; a copy of the Loan Data Entry Screen displaying complete loan entry and loan summary data.

Y (for Yearly Report) is used to execute a loan calculation and Yearly Report printing cycle. The main body of the report is a yearly loan amortization data schedule.

M (for Monthly Report) is used to execute a loan calculation and Monthly Report printing cycle. The main body of the report is a combined monthly and yearly amortization data schedule.

** ACKNOWLEDGMENTS **

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